ED026638

DOCUMENT RESUME

ED 026 638 AL 001 732

Styles of Learning Among American Indians: An Outline for Research. Report and Recommendations of a Conference Held at Stanford University August 8-10, 1968.

Center for Applied Linguistics, Washington, D.C.
Spons Agency-Bureau of Indian Affairs (Dept. of Interior), Washington, D.C.
Pub Date Feb 69
Note-43p.
EDRS Price MF-$0.25 HC-$2.25
Descriptors-*American Indians, Bilingualism, Cultural Background, Cultural Differences, *Cultural Environment, Cultural Factors, *Culture Conflict, Educational Testing, Learning Characteristics, *Learning Theories, Low Achievement Factors, Remedial Programs, Student Characteristics
Identifiers-BIA, Bureau of Indian Affairs, Piute Indians

This outline for research constitutes the report and recommendations of a conference conducted by the Center for Applied Linguistics under contract with the Bureau of Indian Affairs of the U.S. Department of the Interior. Two Conference papers are included. The first, By Countney B. Cazden and Vera P. John, "Learning in American Indian Children," discusses (1) results of Gesell development testing on Piute Indian children; (2) two different styles of learning (by looking, and through language); (3) conflicts in values; (4) patterns of socialization; and (5) learning styles, cultural values, and Indian education. The paper concludes with a 34-item reference list of relevant works. The second paper, "BIA-Sponsored Educational Research," by L. Madison Coombs, comments on the history of the BIA, and its past and ongoing research. The final section deals with recommendations for background studies, related research projects, direct studies and research, and pilot projects. The recommendations are based on three principal assumptions--(1) the relation between learning in Indian society and behavior in schools, (2) the lack of studies of learning in Indian societies, and (3) the relation between low achievement and both language difficulties and different approaches to learning. See related document ED 014 727--"The Study of the Problems of Teaching English to American Indians," by Sirarpi Ohannessian. (AMM)

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STYLES OF LEARNING AMONG AMERICAN INDIANS

AN OUTLINE FOR RESEARCH

Report and Recommendations of a Conference

held at Stanford University

August 8 - 10, 1968

U.S. DEPARTMENT OF HEALTH, EDUCATION & WELFARE
OFFICE OF EDUCATION

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CENTER FOR APPLIED LINGUISTICS

WASHINGTON, D.C.

COMMISSIONED BY

THE BUREAU OF INDIAN AFFAIRS

DEPARTMENT OF THE INTERIOR

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ENGLISH FOR SPEAKERS OF OTHER LANGUAGES PROGRAM

Center for Applied Linguistics

1717 Massachusetts Avenue, N.W.

Washington, D.C. 20036

February 1969

Commissioned by

The Bureau of Indian Affairs

Department of the Interior

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PREFACE

Styles of Learning Among American Indians: An Outline for Research constitutes the report and recommendations of a Conference conducted by the Center for Applied Linguistics under contract with the Bureau of Indian Affairs of the United States Department of the Interior. The Conference was held at Stanford University from August 8 to 10, 1968, with Dr. Charles A. Ferguson as Chairman.

The English for Speakers of Other Languages Program of the Center was responsible, with guidance from Dr. Ferguson, for the organization of the Conference and the preparation of this report. The report was first submitted in draft form to the Consultants for their comments, suggestions and corrections before this final version was drawn up.

The Center would like to extend its thanks to the Chairman of the Conference and to the Consultants and other participants, in particular those who were responsible for the preparation of the working papers. The Center also wishes to extend its thanks to the Bureau of Indian Affairs for its support of the project and to Stanford University for the hospitality extended to the Conference.

Sirarpi Ohannessian
Director, English for Speakers
of Other Languages Program
Center for Applied Linguistics
December 1968

INTRODUCTION

In May 1968, the Bureau of Indian Affairs of the United States Department of the Interior commissioned the Center for Applied Linguistics to organize a Conference of specialists in psycholinguistics, the study of child language, child psychology, Indian cultural anthropology and related fields to outline feasible research projects to investigate the ways in which the styles of learning employed by Indian groups may be related to the school achievement of the Indian student. The present report constitutes the proceedings of the meeting.

The Conference was the direct outcome of the recommendations of the Study of the Problems of Teaching English to American Indians conducted by the Center for Applied Linguistics for the Bureau of Indian Affairs in 1967. It is one of four interrelated projects designed to improve American Indian education through giving special attention to the teaching of English to American Indians. The other three projects involve the preparation of a series of articles for the classroom teacher, based on contrastive studies between English and three languages spoken natively by children in BIA schools; the preparation of a newsletter for teachers and others involved with the teaching of English to American Indians in BIA schools; and the organization of two consecutive work conferences in preparation for a bilingual kindergarten program for Navajo children and for drawing up guidelines for the preparation of teachers for such a program.

The Conference was held at Stanford University from August 8 to 10, under the chairmanship of Charles A. Ferguson, Chairman, Committee on Linguistics, Stanford University. Consultants at the Conference included Courtney Cazden, Graduate School of Education, Harvard University; Edward Dozier, Department of Anthropology, University of Arizona; Susan Ervin-Tripp, Department of Speech, University of California at Berkeley; Kenneth Hale, Department of Modern Languages and Linguistics, Massachusetts Institute of Technology; Wick Miller, Department of Anthropology, University of Utah; Edward Kennard, Department of Anthropology, University of Pittsburgh; Sirarpi Ohannessian, English for Speakers of Other Languages Program, Center for Applied Linguistics; Oswald Werner, Department of Anthropology, Northwestern University. The Bureau of Indian Affairs was represented by Evelyn Bauer, L. Madison Coombs, and Tom R. Hopkins, all of the Office of the Assistant Commissioner for Education. The meeting was also attended by Ralph

Bohrson, Division of Education and Research, The Ford Foundation, and David Risling, Ad Hoc Committee on California Indian Education, who came to the sessions on the first day.

Thelma Weeks, Stanford University, was responsible for the local arrangements for the Conference, attended the sessions and acted as recorder.

The first day of the Conference was devoted to discussions of the background to the Conference, the range of cultural and linguistic variation among American Indians, learning in American Indian children, bilingual education for American Indians, and styles of learning -- the evidence from Navajo and Papago. Working papers had been prepared by Edward Dozier, Courtney Cazden in cooperation with Vera John of Yeshiva University, Edward Kennard, Oswald Werner, and Kenneth Hale. The second day included a review of BIA-sponsored educational research presented by L. Madison Coombs and Tom Hopkins and a statement of the interests and involvements of The Ford Foundation in American Indian affairs, presented by Ralph Bohrson; discussions of possible agencies and institutions that could carry out research in specific communities; the kinds of personnel needed; and possible sources of funds. Both in the papers presented and throughout the discussions there was a strong feeling that a historical perspective was necessary in looking at new developments and new projects and that the experience gained in the past should not be neglected in making new plans.

The third day was devoted to the formulation of the recommendations of the Conference for specific areas of research and for specific projects. The discussions were based on a preliminary outline prepared by Courtney Cazden and Wick Miller in consultation with Charles A. Ferguson and Sirarpi Ohannessian.

LEARNING IN AMERICAN INDIAN CHILDREN

Indian children are taught to learn in two different ways. In school they learn "in the ways of the White Man", as Mrs. Wauneka, the Navajo educational leader, puts it. In their homes the children learn in the ways of their people, in traditional cultural patterns which have remained durable even after 400 years of life among Europeans.

This duality of Indian life with its impact upon children's learning styles should be the focus of serious study. However, customary procedures of educational research militate against a faithful recording of how, in fact, the Indian child does learn. Studies of these children are usually carried out in school, though we know that the school is still an extremely threatening place to most Indians. Timed tests are administered, though we know that time for the man who lives by nature is not the same as time for the urban man who lives by the clock. Children are tested in English, though for many Indian children on reservations their own language is the logical medium through which to find out about their learning.

Additional questions can be raised. Who should be present when Indian children are tested? Fishler, in a study quoted below, reports how the young Indian child responds to parental encouragement in the testing situation. But parents are seldom present. How representative are the samples of Indian children on whom research data has been gathered? Weather and road conditions on the reservations make access to many Indian families very difficult.

Thus, when presenting research findings on Indian children, we are forced to start with a disclaimer. Because of important unresolved questions of research ideology and strategy, the reader is urged to be cautious in interpreting the review of research literature which follows.

This paper was prepared for the Conference by Courtney B. Cazden, Harvard University, and Vera P. John, Yeshiva University. The authors are grateful to the following people for both ideas and references: Glen Nimnicht of the Far Western Laboratory for Educational Research and Development, Jeanette Henry of the American Indian Historical Society, Robert Dumont of the National Indian Youth Council, Dell Hymes, Arthur Jensen and Wick Miller.

The review is divided into five sections: (1) tests of learning prior to school entrance; (2) styles of learning; (3) conflicts in values; (4) patterns of socialization; and (5) a discussion of styles of learning, culture values, and Indian education.

1. Tests of learning prior to school entrance

Glen Nimnicht of the Far Western Laboratory said (personal communication, 1968) it was his impression that Indian children arrive at school without the general cognitive disadvantages of children in urban slums. Available evidence supports his view. Although on socio-economic indices such as per family income, infant mortality, unemployment, and education of parents, Indians are in a lower position than Negroes (Kuttner, undated), test scores of Indian children reveal a specific deficit in language but not in other areas.

Scores on the Gesell Developmental Scales are available for Piute children in Inyo County, California who are the subjects of a longitudinal study conducted by the Child Development Clinic at Children's Hospital in Los Angeles. This study is still in process and the following information is from a personal communication from the chief psychologist, Dr. Karol Fishler. Table 1 reports the scores for 44 children in the first year. The Gesell scales are designed to yield an average score equal to chronological age in months (12 for 12-month-old, etc.) and an average developmental quotient (DQ) of 100. Scores for subsequent years, as each group gets one year older and a new group is added at the youngest age, are almost identical. The 1966 progress report concludes tentatively:

> It appears that Indian children at age levels one, two, three and four show normal development comparable with other infants and normal children of same ages....All Indian children show consistently slowest gains in their language achievement at all age levels tested....Most Indian children, in their first three years of life, show excellent gains in their self-care involving self-feeding, toilet training and dressing....Behaviorally, Indian children, particularly those at these age levels, seem rather shy and cautious in social situations with strangers. However, for the most part, they seem well-disciplined and with parental encouragement even the youngest follow instruction and occasionally overcome their shyness (Fishler, personal communication, 1968).

The native language of Piute children, as of virtually all California Indians, is English. But even for English-speaking Indians, language remains an aspect of behavior burdened with cultural conflict. This conflict may be reflected both in parents' behavior in the setting for language learning within the family, and in the child's restricted verbal performance in the testing situation itself. (See Pasamanick and Knoblock (1955) for comparable data on Negro children.)

Table 1

Summary of Gesell Developmental Testing on
Piute Indian Children in Bishop, Inyo County

February - March, 1964

N - 44

	Group 1 N = 10	Group 2 N = 17	Group 3 N = 13	Group 4 N = 4
Age in Months:	6 - 17	18 - 29	30 - 41	42 Plus
Developmental variables and levels in mo.				
. Motor	13.3	26.1	36.5	46.5
Adaptive	12.4	23.2	34.2	40.5
Language	11.1	21.2	31.2	39.0
Personal-social	12.7	22.8	37.4	42.0
Mean Level:	12.37	23.32	34.82	42.0
Range DQ:	94-117	82-107	79-121	83-94
Mean EQ:	104.10	95.53	100.30	88.50

Sample Grand Mean DQ = 97.36

Data on a larger sample of Indian children (tribes unspecified) were collected in the fall of 1965 as part of the USOE-sponsored study of educational opportunity (Coleman, 1966). Three tests were given to first grade children:

(a) A non-verbal classification test on which the child is asked to select one of four pictures which go with the first one, e.g.: hat / horse dog cat man;

(b) A non-verbal association (or discrimination) test on which the child is asked to select the one that is not like the others, e.g.: hi hi ki hi;

(c) A picture vocabulary test. Scores were converted to a scale on which the national median for all children is 50. Scores for Indian, Negro and majority white children in first grade are given in Table 2.

Table 2

Nationwide First Grade Test Scores

(Coleman, 1966, p.20)

	Indian	Negro	White
Non-verbal	53.0	43.4	54.1
Verbal	47.8	45.4	53.2

Although these findings are interesting in supporting the general picture of better non-verbal than verbal scores, the necessity of using highly standardized testing procedures in a large national survey raises questions about the meaning of particular tests to children from different ethnic groups, even from different tribes. Identical stimuli are not necessarily subjectively equivalent to different groups of children. See Sears, 1961, for further discussion.

Finally, Havighurst (1957) reviews studies of the intelligence of Indian children before and after 1935 and concludes that all recent studies show that on non-verbal performance tests, Indian children have the same average scores and show the same range of performance between tribes and between communities within tribes as white children between and within communities.

2. Styles of learning
Learning by looking

Throughout the literature on Indian children, we find suggestions that their style of learning is more visual than verbal, more learning by looking than learning through language. Learning by looking may be reflected in several different performances: a particular academic skill such as spelling, culturally developed forms of visual art which are tapped by the Draw-a-Man (DAM) test and expressed in free drawings, and in learning by imitation.

(a) Spelling is at least partly a matter of visual discrimination. Older Indian children continue to show relative superiority in the visual discrimination skill measured in the second of the three tests administered by Coleman (1966). In their survey of academic achievement of 13,000 Indian children in 11 states, Coombs, et al. (1958) found that relative to their non-Indian schoolmates and neighbors, Indian children do worst on reading vocabulary tests,

and best in spelling. On the California Achievement Test, the pupil is asked to identify which one of four words is misspelled. Coombs, et al. suggest that visual imagery and form perception are reflected here (1958, pp.92-3).

(b) There is considerable evidence that Indian children from various tribes excel in the kind of ability tapped by the DAM test, which is scored for accuracy in proportion and detail. In 1942-3, as part of the Indian Education Research Project of the Committee on Human Development of the University of Chicago, this test was given to 1,000 Hopi, Navajo, Papago, Sioux, Zia and Zuni children. When converted to IQ's, the average scores ranged from 117 for Hopi children to 102 for the Sioux children (Havighurst, 1957). Havighurst, Gunther and Pratt conclude from these data:

> The children of Indian tribes which have kept close touch with the world of nature and with their indigenous cultures are specially stimulated to observe accurately, to organize their observations and express them aesthetically, and thus may be expected to do well on the DAM test. White children, and urban white children especially, may have much less chance to form concepts from firsthand observation, but must rely more upon books and words (1946, p. 61).

Correlation between scores on the DAM test and the Grace Arthur general non-verbal intelligence scale was lower for Indian than for white children.

Dennis (1940, pp. 341-348) gave the same test to 152 Hopi children with similar results: IQ - 108.3. In both studies, the Hopi boys exceeded the Hopi girls, presumably because "graphic art is almost entirely a masculine activity in Hopi culture" (Dennis, 1940, p. 342).

(c) In the Havighurst study, free drawings from 90 Hopi children were also evaluated by an art teacher. In comparison with the drawings of 1400 children in Cleveland, many of whom attended special art classes, the Hopi children go through the same developmental sequence toward realism and spatial representation but reach the fourth of five stages a year or two earlier, by age 12. After that time, the competing pressure of tribal conventions toward stylized Kachina forms takes precedence and shifts the Hopi development away from the Cleveland pattern (Havighurst and Neugarten, 1954, pp. pp. 179-185).

(d) Learning through imitation is reported in many ethnographic studies. It may be related to the previous kinds of learning by looking, or it may represent a different underlying process.

From his survey of ethnological literature, Pettit (1946, pp. 40-58) agrees that the dominance of imitation is a commonly accepted characteristic of education in non-literate societies. In

contrasting non-literate and literate societies, Pettit suggests that "a greater proportion of the culture of a primitive society is within the direct reach of the sensory organs of the primitive child" (1946, p.40), while in more complex societies adult activities are less understandable by observation alone, less appropriate for the active play needs of children, and therefore less directed by adults for instructional purposes. As a result, play at home and learning at school have perhaps inevitably become more separated. Within non-literate societies, Pettit found that "primitive play, where it reflected adult pursuits, was to a large extent directed practice rather than merely imitation" (1946, p.44), and that such practice was encouraged -- positively by praise, ceremonial recognition, and the reward of specific privileges, and negatively by ridicule.

Implications for education of this style of learning are suggested by Rohner:

> A fundamental difference lies in the method of learning. This difference creates an important discontinuity in the enculturation process of the children. Kwakiutl children typically learn by observation, manipulation and experimentation in their native setting, but they must learn by verbal instruction, reading and writing in the classroom (Rohner, 1965, pp. 334-335; emphasis added).

Learning through language

Problems in learning a second language, either English or an Indian language, were discussed in the report of the preceding conference (Ohannessian, 1967) and will not be included here. Five other aspects of learning through language may be important in the education of Indian children: cognitive implications of the syntax or semantic structure of the child's native language; cognitive effects of various forms of bilingualism; developmental retardation in the child's native language; sociolinguistic interference between patterns and functions of communication at home and at school; the art of story telling.

(a) The famous Whorfian hypothesis that language influences thought (or, more strongly, molds it) was originally largely based on anecdotal evidence from American Indian languages. Empirical studies with Indian subjects (e.g. Lenneberg and Roberts, 1956; Carroll and Casagrande, 1958; Suci, 1960) indicate that differences in languages do affect cognitive behavior in certain limited ways, but there is no evidence that such differences are a cognitive liability. The assertion that English, more specifically Standard English, is somehow a better medium for abstract thought is a popular but, to our knowledge, wholly unproven claim.

The study by Carroll and Casagrande (1958) is worth describing in more detail not only for its substantive findings but for its

thoughtfully planned research procedures with Indian children. In Navajo verbs of handling, the verb form must be selected according to the shape of the object of the verb. Because of this obligatory categorization of objects, it seemed reasonable that Navajo-speaking children would learn to discriminate form attributes of objects earlier than their English-speaking age-mates. Stimuli for an experiment to test this hypothesis consisted of ten sets of three objects: e.g. a yellow stick and a blue rope, and then a yellow rope. The child was shown the first two and then asked which was like the third. Subjects were 135 Navajo children from an Arizona reservation 3-10 years old and divided into three language groups: monolingual in Navajo or Navajo-predominant (59), balanced bilinguals (33), and English-predominant or English monolinguals (43):

> The experiment was conducted in Navajo, or, with appropriate modifications in the instructions, in English, as indicated.... Most of the testing was done in the children's homes -- usually Navajo hogans of the traditional sort -- and in the presence of parents, grandparents, siblings, and other interested and very curious onlookers (Carroll and Casagrande, 1958, p. 28).

The hypothesis that the Navajo-dominant children would be more likely than the other Navajo children to select on the basis of form was borne out by the data. But a separate control group of 47 white middle-class children in Boston also tended to group the objects by form, presumably because of experience with formboard types of toys.

(b) Stafford (1966) has studied the effects of compound vs. coordinate bilingualism on the problem-solving abilities of 105 Navajo 8th graders in Ft. Defiance and Chinle, Arizona. Each subject was asked to determine which pattern of squares or triangles presented on a 2x2 screen was "correct". Four concepts to be learned varied from the simplest -- "Push the button next to the square regardless of its location", to the hardest -- "Push the button by the square when two figures are side-by-side on the screen; push the button by the triangle when the figures are diagonal on the screen". Subjects were divided into compound bilinguals who had learned both English and Navajo before starting school (41), coordinate bilinguals who had learned Navajo at home and English at school (44), and monolinguals in English (20). A sample of monolinguals in Navajo was not available, so the comparative value of English and Navajo could not be tested. Directions were given in English. In number of trials out of a possible 100 needed to reach a criterion of 10 correct (with IQ as a covariate in the analysis), coordinate bilinguals did better than compound bilinguals; bilinguals who reported using only one language did better than those who used both; but, contrary to expectations, coordinate bilinguals were not inferior to monolinguals.

Although there is no evidence to support the assumption that one language is superior to another as a tool of cognition, if the

Indian child has not had the chance to develop his mother tongue before he is taught English he may find himself in the position of the compound bilinguals in Stafford's study who rely on both languages and show the poorest performance. The psychological effects of compound bilingualism may be particularly critical in the period between 5-7 years when the role of language in cognition is just being established. See White (1965) for a review of the developmental changes which take place during this critical period which coincides with the beginning of school.

(c) and (d) We found no evidence of the status of language development of Indian children in their native language, and we know of no research on sociolinguistic interference in the classroom. Research in both of these areas is sorely needed.

(e) Despite the emphasis on learning by looking, the importance of story telling in primitive education should not be overlooked. Pettit (1946, pp. 151-160) provides extensive evidence that story telling was specifically directed to children -- to supply reasons for rules in dramatic form, and to convey religious and social knowledge. Wherever such traditions survive, it cannot be claimed that children come to school with no experience in learning through language. Currently, the more than 100 Head Start programs administered by the Office of Navajo Economic Opportunity are using tribal elders as auxiliary personnel in the classrooms for telling traditional tales to the young children.

3. Conflicts in values

Brophy and Aberle (1966) suggest three sources of conflicts in values: the Indians' concepts of time, their disposition to conform to nature rather than dominate it, and their social withdrawal in school. The same three sources of conflict appear in Zintz's contrasts between the values of the public school and the traditional Navajo and Pueblo cultures (1963, pp. 151 and 175). While these values are separable from learning narrowly conceived, they are so frequently suggested as explanations of the low school achievement of Indian children that each merits further discussion from additional sources.

(a) Differences in time orientation could affect school performance in at least four ways. First, attendance may be lowered, particularly where school bus schedules increase inflexibility (Adcock, 1968, p. 4).

Second, in school, it may be harder to command children's attention according to teacher-designed schedules. Wolcott suggests that the "fooling around" behavior of Kwakiutl children which teachers interpret as poor motivation and short attention span "is more of an unhurried view of the cosmos: pupils seem to pause to daydream, to draw, or to do anything except what the teacher has planned"(1967, p. 92). And Adcock describes a successful summer

program in which Crow children selected both their classes and the amount of time they wished to stay (1968, p. 14).

Third, differences in time orientation probably affect scores on any tests or test-like assignments which are timed. Havighurst and Hilkevitch (1944) report an experiment by Klineberg in which Yakima children worked more slowly but more accurately than white children on a non-verbal test. In their own research, Havighurst and Hilkevitch found that of the subtests of the Grace Arthur Point Performance Scale on which Indian children in the six tribes listed above did as well as white children, two were timed tests. Similarly, the two non-verbal performance scales given to first graders in the Coleman (1966) Report were both timed. These three studies are not necessarily contradictory, however, for it may be the case that the Indian children would have been in an even stronger comparative position if pressure for speed were removed. See Haggard (1954) for further analysis of the speed factor in intelligence tests and see Fishman, et al. (1964) for recommendations on testing minority group children.

Fourth, time orientation may be related to willingness to plan ahead and delay gratification. According to Zintz, for the Navajo planning ahead "is considered [sic] bahazid, [báhádzid] i.e. dangerous. To talk about something too far in advance (a few days is all right; a year is too long) just is not done, not out loud anyway" (1963, p. 358).

Independent experimental evidence for these claims of a different cognitive, or motivational component of time orientation is hard to find. We found only two relevant studies. In "An analysis of time perspective and its applicability to cross-cultural comparisons" Roberts and Greene (1966) asked Navajo, Pueblo, Spanish-American and Anglo-American 10- and 16-year-olds to tell stories about one "social" and one "religious" picture. The stories were scored for such dimensions of time orientation as temporal "location" of the main events, "extension" or duration of time in the story, and "movement" or number of changes in temporal location during the story. The stories were also rated for the presence and explicitness of any mention of specific temporal units.

Roberts and Greene found that more of the Indian stories contained no temporal movement (60% compared with only 33% for the Anglos); and they were more apt to extend over less than a one-hour period. Compared with the other groups, the Indian social stories were more apt to be written in the present while their religious stories were more apt to be written in the past. The authors note that absence of the future may be related to inadequate command of English verb tenses. They report that preference for the present and the past over the future was also found in Kluckhohn and Strodtbeck's study of Navajo and Zuni value orientations (perhaps also confounded with the subject's knowledge of English).

In his study of Stoney and Blackfoot 11-year-old boys in Canada, Vernon included a "delay-of-gratification test" in which the boys were offered a small chocolate bar now or a double-size bar later. 50% of the Stoney boys and 32% of the Blackfoot boys chose to wait, in contrast to 48-69% of the Eskimos and 75% of the English boys in a previous study. It is possible, even likely, that this test taps task- and situation-specific behavior rather than an enduring personality characteristic. Furthermore, experiments of this kind are open to question because of the differential availability in the child's home environment of the rewards used in the test situation.

(b) According to Zintz, "the area of elementary science presents a segment of the school curriculum likely to be most in conflict with the child's out-of-school life, that is, with his set of cultural values" (1963, p. 297). He reports one study which found a strong inverse relationship "between the science achievement status of Indian children [Navajos and Pueblos in New Mexico] and the extent of their acceptance of certain unscientific societal beliefs [sic]" (Zintz, 1963, p. 298).

One could conclude from this study that preserving indigenous religion and learning modern science are incompatible. But Havighurst's (1957) findings in the domain of game rules suggest an alternative. 24 children in an isolated Navajo community were familiar with both traditional Navajo games and white games like baseball or marbles. When asked who made the rules and whether they could be changed, the children gave two separate answers:

> Concerning the "white" games, they generally said that the rules were made by the coach, or the teacher, or some person in authority, and that those rules would be changed by agreement among the people playing the game. This kind of answer is given by white children. But when asked about rules of traditional Navajo games, the Navajo mountain youth said unanimously that the rules were first made by the "holy people", or by the "ancient ones", or by the "animals" -- who in ancient days possessed human characteristics -- and that no human could change the rules (Havighurst, 1957, p. 108).

Borrowing terminology from the bilingualism area, we can call this kind of compartmentalization a "coordinate belief system".

(c) The social withdrawal of Indian children in school is frequently attributed to value conflicts over cooperation versus competition, aggression versus compliance, or anonymity versus self-assertion, depending on the author and tribe being discussed. Following are examples in descriptions of particular tribes.

Kwakiutl

> Forms of independence and aggression, for example, are rewarded in non-school activities but they are discouraged in the classroom....The child must learn a form of compliance behavior which is not expected out of school; competition with peers rather than sharing and cooperation is expected (Rohner, 1965, p. 334).
>
> In meeting their classroom assignments the pupils interpreted their tasks as a matter of group as well as of individual concern. This had one major advantage in that for many tasks pupils paired off and completed assignments in informal competitions....The motivating effect of their self-imposed competition was more than offset from the teacher's point of view by the tendency of pupils constantly to help each other (Wolcott, 1967, p. 104).

Sioux

> There are situations where rivalry holds full sway. Usually these involve contests between the folk of the community and some other group who are or can be regarded as outsiders. Thus the youthful Sioux are transfigured when they are matched with outsiders in basketball tournaments or dancing contests....Outside of school, if a young kinsman should get into trouble with 'strangers' the child knows that he is supposed to stand by him. But within the school, if the same kinsman stands squirming before the class because he does not know the answer, the teacher says he is not to help him (Wax, Wax and Dumont, 1964, pp. 54 and 82).
>
> Thus, on the Pine Ridge reservation a majority of the young men arrive at adolescence valuing elan, bravery, generosity, and luck, and admiring outstanding talent in athletics, singing and dancing ....[Yet] in order to graduate from high school, they are told that they must develop exactly opposite qualities to those they possess: a respect for humdrum diligence and routine, for 'discipline'... and for government property (Wax, 1967, p. 45).

Pueblos

> The Indians of the Southwest, and especially the Pueblo tribes, are notably co-operative. Consequently, if a teacher in a government school, who has been accustomed to assume that children are competitive, tries to appeal to this kind of motivation by using spelling contests or by encouraging children to call attention to the mistakes of other children, the teacher may be perplexed to find that such teaching methods do not work very well. The Indian children may not parade their knowledge before others nor try to appear better than their peers (Havighurst, 1957, p. 109).

In general

> This expert [a psychiatrist speaking at a conference on Indian education] stated that the Indian youth were not competitive, that they were undisciplined at home. Nothing is further from the truth. The Indian is extremely competitive. He delights in being the best, the most, the brightest. But when an Indian child is turned off -- first by his history, next by his economic conditions, and then by what is being taught in the schools -- what else can you expect but that he will drop out if he finds the situation intolerable?" (Costo, 1968, p. 8).

4. Patterns of socialization

Other frequently mentioned sources of value conflicts are indigenous patterns of socialization:

> The complaint voiced by many administrators at the site schools that Indian parents were unwilling or unable to discipline their children should be re-examined. As mentioned earlier, previous studies of Indian communities have consistently concluded that discipline is maintained through teasing rather than direct criticism or restraint....My experience with Indians during this project has repeatedly shown me that teasing is the dominant mode of reducing an individual's (in this case my own) sense of importance....If it is a fact, as our present data suggests, that teasing is the primary form of discipline within Indian groups, it follows that the school cannot expect parents to directly criticize their children in the principal's office or to lecture their children at home. Teasing is an indirect form of criticism and as such, it needs a regular and relaxed context to be effective (Adcock, 1968, p. 24).

> In their stress upon the distinctive nature of Sioux values and ethos, Bureau personnel are in company with many anthropological students of American Indians, including ourselves. Where we differ -- both with the Bureau and with some of the preceding students of the Sioux -- is in the exact characterization of this ethos and in the judgment which is rendered, accordingly, upon the possibilities of Sioux adjustment to the greater national society...it may be worthwhile to note some of the distortions that have crept both into anthropological writings and into the speech of some Bureau personnel. For example, it is said that Indian children are treated with such excessive permissiveness and indulgence that they are never subject to any discipline. Yet the same observers who assert this will comment on how well Indian children behave in a significant variety of social situations (Wax, Wax, & Dumont, 1964, p. 39).

According to Pettit (1946, pp. 6-14), while "stress is put upon the family responsibility to see that a child turns out well" (p.8), successful child rearing does take unique forms among Indian tribes. First, "it seems obvious that the chief inhibition to corporal punishment as a disciplinary measure derives from the fact that pain per se cannot be used as a fear-producing, coercive force in a social milieu which places a premium upon ability to stand pain and suffering without flinching" (Pettit, 1946, p. 8). Second, there is a "universal tendency to refer discipline or the authority for it to some individual or agency outside the group, and the tendency to rely most practically on supernatural agencies as the ultimate reference" (Pettit, 1946, p. 14). Third, Pettit suggests that the widespread use of cradelboards, while not affecting motor development, may have the psychological effect of making Indian children especially amenable to early training. Fourth, there is the important role of ridicule or teasing as a means of social control. See Wax, Wax and Dumont (1964, pp. 79-101) for a grim picture of how this behavior is transformed into picking on and bullying under certain school conditions.

5. Styles of learning, cultural values, and Indian education

The objective of this paper was to present research which goes beyond the usual presentation of achievement data on Indian children. The question, "are there culturally specific ways in which Indian children from various tribes approach structured tasks and discover the world around them?" is an important one. However, difficulties inherent in gathering valid and reliable information about Indian children cannot be mentioned often enough.

Consider a final example. In the Coleman study (1966) two expressions of pupil attitudes, "sense of control of environment", first, and "self-concept", second, were more strongly related to school achievement than any other measure of family background or school facilities. Table 3 gives percentages of 12th grade Indian, Negro and white pupils for these two attitudes.

On all six comparisons the Indian children are in the worst position. The young Indian's feeling of powerlessness exceeds that of his white and Negro age-mate. But how accurate is this finding? One may question the sample. A substantial percentage of reservation Indians have quit school long before the 12th grade. And those who live in the city are often hard to identify. These results may then apply only to a special subset of Indian youth.

The interpretation of these findings also presents problems. Different groups may have different attitudes toward answering questions about the self. Or, if we accept the data as presented, the articulation of lack of control over the environment may be simply a realistic report about life observed by the growing Indian child who sees his elders' powerlessness in white society. And the widespread self-doubt among Indian youth -- nearly half of whom agreed with the statement, "I just

Table 3

Percent of 12th Grade Pupils Having Certain Attitudes

(Coleman, 1966, p. 24)

	Indian	Negro	White
Sense of control of environment			
Luck more important than work	11	11	4
When I try, something stops me	27	22	14
People like me don't have much of a chance	14	12	6
Self-concept			
Believes self to be brighter than average	31	40	49
I just can't learn	44	27	39
I would do better if teacher didn't go so fast	26	21	24

can't learn" -- may be related to the severe alienation of teachers and students from each other depicted in the studies of the Waxes and their co-workers (1964).

Many social scientists who have been concerned with learning styles and conflicts in values have been searching for possible barriers to the assimilation of Indians into the majority society. For example, the research reported by Brophy and Aberle (1966) was commissioned after a 1953 resolution was passed by an assimilation-oriented United States Congress. In dramatic contrast to this point of view, many young Indian intellectuals speak of a new tribalism. For instance, an unsigned editorial in the National Congress of American Indians Sentinel (1966, 11, No. 2) stated in part:

> Recent events seem to be preparing the ground for a new understanding and appreciation of Indian tribes in modern society.... Indians are standing up for their rights in the same manner as people all over the globe. There seems to be...a real desire by American Indians to learn what American society is and how one finds economic security in it. At the same time there is an ever increasing rejection of the social values of the "mainstream" and a return to Indian values.

> There can be little doubt that technology has contributed the major impetus to this yearning for old ways. Technology has as a basis the creation of the inhuman human...[It] is inhuman in the sense that men now get little if any personal fulfillment from their toil....The foolishness of the present situation in Indian affairs is that too many people are trying to re-state old mass truisms such as "assimilation" without taking into account that in the present society for anyone of any race, creed, color, or religion to "assimilate" into the values of the mass of people whose lives are directed by technological considerations is to forfeit the chance to live constructively, beautifully and meaningfully....The tribe, we feel, must always receive primary consideration as it is the group within which people are allowed to express themselves and realize that they truly are people with definite values, ideas, hopes and goals and unless a society is allowed to express its goals, it cannot long endure (Steiner, 1968, pp. 299-300).

Depending on the value orientation of the social scientist or educator, indigenous Indian styles of learning and cultural values will be seen as impediments to achievement in schools as they now are, or as guidelines to the establishment of schools better adapted to the cultural values of Indian children. In this area, cultural conflict is great between observer and observed, teacher and pupils, policymaker and target population. While it is potentially a very significant source of ideas for educational innovation, research designed and carried out by those raised in the culture will be essential to gathering the only kind of information on which meaningful recommendations for change can be based.

Perhaps, during this period of "agonizing reappraisal" of education among minorities, attempts at genuinely new developments in classroom practices as well as research strategies will take hold. One example of a research project in which Indians have been asked to participate is the recently initiated National Study of American Indian Education, directed by R. Havighurst. He and his staff are working closely with their Indian advisory board; they are committed to Indian participation in all aspects of the research.

Our own belief is that educational research reflects underlying assumptions about the objectives of education. We join those who seek a kind of education that will provide a dual preparation for every Indian child in what we hope will be an increasingly pluralistic society. His education should equip the young Indian with the minimum skills necessary for urban society, if he chooses to participate in it. And it must do this without neglecting his growth within his traditional society, thus freeing him for the other choice of developing Indian life among Indians.

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BIA-SPONSORED EDUCATIONAL RESEARCH

The education program of the Bureau of Indian Affairs has never had a really well-developed research capability. The need for one is now recognized both within the Bureau and outside it but budgetary and personnel constraints may further delay its development.

This is not to say that nothing has ever been done in the way of research, but the research activity has varied with the interests and predilections of the persons who have been in charge of Indian education. Willard Beatty, who was Director of Education during the late 1930's and 1940's, was research oriented. He had been a leader in the progressive education movement prior to coming with the Bureau and during the 1940's set up a research arrangement with the University of Chicago. Before he left his position in the early 1950's, he had shifted the research activity to the University of Kansas for various reasons. Coincidentally, the Beatty era was a sort of "golden age" of anthropological research which had received encouragement from him. Prominent among these anthropologists were Clyde Kluckhohn, Alexander and Dorothea Leighton, Laura Thompson, Ruth Underhill, Edward Kennard, Gordon McGregor, and Edward Spicer.

Before commenting more specifically on the work done at the University of Chicago, it is worth mentioning early research done by non-Bureau connected researchers W.C. Eells and Grace Arthur. Eells worked mainly with Alaskan native children and the conventional tests of mental ability which he used seemed to give credence to the idea that native children might be innately inferior mentally. Grace Arthur, on the other hand, standardized her Point Performance Scale partially on Indian children, including the Hopi. The performance of the Hopi children exceeded that of children in the general population. For example, the Kohs Block Design probably played to their cultural strengths rather than to their cultural lacks, as did many conventional tests.

The University of Chicago attempted to develop mental tests which were more valid in the Indian culture, and achievement tests which were more

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This paper was prepared for the Conference by L. Madison Coombs, Chief, Research and Evaluation Staff, Office of the Assistant Commissioner for Education, Bureau of Indian Affairs.

valid for the BIA curriculum. In the former category were series completion, visual imagery, and spatial relations tests. Specially designed achievement tests were in homemaking, natural resources, and science. Also developed was a free-writing test which was aimed not only at measuring communication skills but also for use as a projective instrument in determining attitudes. Some conventional group tests were also used, such as the Otis Quick Scoring Test of Mental Ability and the Gates Reading Test. Unfortunately, the special tests developed at the University of Chicago were never normed and so their usefulness was largely dissipated. It is a fact, often unfortunate, that most teachers feel a great compulsion to compare their pupils with others, particularly with a mythical "normal" child. The results of the Chicago study were reported by Shailer Peterson in the monograph, How Well Are Indian Children Educated?. Dr. Ralph Tyler was Dean of the Department of Education at that time, and the late Dr. Hilda Taba participated in the research.

In 1950, because of the transfer of a number of key people, both at the University of Chicago and the Bureau of Indian Affairs, the educational measurement program was transferred to the University of Kansas. The University of Kansas and BIA researchers did not use intelligence tests but concentrated on achievement tests, together with certain kinds of background data about students such as language spoken in the home, degree of Indian blood, place of residence, age, type of school attended, choice of friends, educational level of parents, educational aspirations, etc. I feel that at this point Beatty fell into a familiar trap. He felt the criticisms and pressures that all administrators feel and he felt under some necessity to defend the effectiveness of his educational program. He believed that he had improved his schools after World War II to such an extent that Indian children in Bureau schools might be achieving as well as children in the general population. He was mistaken about this. Like most people, he somewhat overvalued the influence of the school on learning by comparison with the influence of the home and the community.

In the testing done in the early 1950's, Indian children did not achieve as high as white children or as Indian children in public schools. The studies did show, however, an almost perfect correlation between achievement and the use of English in the home and an inverse correlation between achievement and the degree of Indian blood. This only confirmed earlier findings. The researchers did not feel that these factors, in themselves, were so much determiners of achievement as that they indicated the extent to which the pupils and their families had embraced the major culture on which the tests were based.

It also became clear, however, that as the Indian children progressed through school, they fell farther behind the national norms. We now know that this tends to be a phonomenon characteristic of all environmentally handicapped or socially disadvantaged children, but that fact was not well understood 10 or 15 years ago. I have heard it said that this was the only new finding of the study. I think there were two

others that were important but which failed to make much impact at the time. First, both Indian and white children were asked to say whether all or most of their friends were of their own race or of a different race. In the states of Montana and Wyoming, where most Indian children had been attending integrated public schools for at least a generation, more than 80 percent of 1,000 Indian children and 1,000 white children said that all or most of their friends were of their own race. This was a distasteful finding not in tune with the temper of the times and so was ignored. I believe it could have warned educators that integration does not automatically produce desirable results but that people of goodwill must work at making it succeed. The second finding, which was significant but not given much notice, was that the achievement of white pupils in the study differed widely in different parts of the country. For example, the white pupils in North and South Dakota achieved significantly higher at every grade level than the white pupils in Eastern Oklahoma, and yet 92 percent of the white children in the Dakotas and 98 percent of the white children in Eastern Oklahoma came from homes where only English was spoken. This seemed to provide clear evidence that the language spoken in the home is not the only determiner of achievement and that socio-economic factors, even in white subcultures, can be very important.

The following quotation, taken from the publication Sociocultural Determinants of Achievement among Mexican-American Students, by James Anderson and William Johnson of New Mexico State University, is pertinent:

> More recently, support for the pervasive influence of these background factors on subsequent school achievement has been provided by one of the major conclusions of the Coleman study; namely, that the largest portion of variation in achievement among students who attend different schools is not due to differences in the school programs, staff, and facilities, but rather is a consequence of variations in the background of children when they first enter school. Moreover, Coleman's data demonstrate that children from various ethnic groups not only enter the school at a measurable disadvantage as illustrated in Figure 1, but that the disadvantage becomes more pronounced as they progress through school as measured at the 12th grade level.

The following quotation from James Anderson and Dwight Safer's publication, The Influence of Differential Community Perceptions on the Provision of Equal Educational Opportunities, is in the same vein:

> With the belated realization of the extent to which a student's background drastically affects his performance in school, a third approach has been adopted, namely, to assume that students from culturally impoverished homes are de facto subject to unequal educational opportunities.

Moving to current research being performed for the BIA, the Southwestern Cooperative Educational Laboratory, Inc., at Albuquerque has for the past two years been studying the achievement patterns of Indian students

in both BIA and public high schools. The results of the second year of testing have not yet been reported and it would be premature to attach too much importance to the results of the first year, but tentatively these suggest that while Indian children in BIA schools start at a lower level of achievement than do Indian children in public schools, because of socio-cultural factors, their learning increment during the course of the school year is greater. This is not offered in defense of the boarding school as an institution but only because it is felt that all of the evidence on both sides of the issue should be thrown into the scales. The now well-known Coleman Report growing out of the Office of Education study of equal educational opportunity is being further analyzed and abstracted by the Office of Education. It shows that Indian children in both BIA and public schools, while achieving well below the level of white children and oriental-American children, achieve slightly higher than Mexican-American children and well above the level of Negro and Puerto Rican children in the study.

Finally, the National Study of Indian Education, already known as the "Havighurst" study because of its Director, Dr. Robert J. Havighurst, is believed to be significant and deserves mention. This national study, which is being funded by the U.S. Office of Education and carried out under a contract with the University of Chicago, will take approximately three years for completion. It is a culmination of a long-talked-of survey of Indian education authorized by the Congress in 1954 but never funded until recently. Within the last two or three years, Indian education has become a matter of much more widespread national interest than heretofore. The national study will consist of three general parts:

A. The extensive study, which is to be quantitative and factual. It will include such data as number of pupils, numbers and kinds of schools, descriptive data concerning teachers, etc.

B. The community studies involving a small number of selected Indian communities, perhaps no more than eight. These will be community "self-studies" and will probably have only a tangential connection with the study of schools.

C. The school study which will examine in some depth about 25 selected schools, both BIA and public. The school studies will do little formal testing but will utilize test and other data collected by other agencies. This study will concentrate on such matters as:

   1. The degree of community control of the school.

   2. Goals and objectives of the school.

   3. Perception by teachers and administrators of their roles.

   4. Interrelationships between pupils and teachers, teachers and parents.

5. The perception of the school by parents and pupils.

The method of study will be largely the interview technique, and it is the recommendation of the Indian members of the Advisory Committee to the study that the study subcontract with Indian tribal entities to do the interviewing. This will very probably be done.

RECOMMENDATIONS

The recommendations of the Conference are based on three principal assumptions:

1. Relation between learning in Indian society and behavior in schools

It is assumed that there is a direct relationship between the nature of learning among children in the setting of their Indian society and the teaching procedures and kinds of learning which take place in schools, and that an understanding of the styles of learning employed by American Indian groups will have important implications for educational planning for American Indians and for teaching techniques used in their education.

2. Lack of studies of learning in Indian societies

Although some recent work on learning theory has dealt with the analysis of different ways of learning in different societies and for different kinds of behavior, and although a few studies have been concerned with performance patterns among different ethnic groups in the United States, no such studies, to the knowledge of the Conference, have been done with American Indians and there is urgent need for this. Also, learning theory so far has been mainly concerned with general theories of learning that are not culturally conditioned and has concentrated more on similarities than differences in individual and group behavior. Any systematic research on styles of learning employed by Indian groups will therefore have implications not only for the better education of Indians, but for that of other minority groups and provide guidelines for more specific research and experimentation in this area for such groups.

3. Relation between low achievement and both language difficulties and different approaches to learning

There is evidence to indicate that on non-verbal performance tests Indian children have the same average scores and show the same range of performance between tribes, and between communities within tribes, as white children between and within communities (Havighurst, 1957).*

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* Cf. p. 4.

However, on other standardized tests the performance of Indian students ranks consistently below national norms, and the Indian child seems to fall progressively behind these norms as he goes up the school ladder (Coombs et al., 1958). Also, as pointed out above, test scores of Indian children reveal a specific deficit in language prior to school entrance but not in other areas,** but there is also evidence that language alone does not seem to be the determinant of success in the school achievement of American Indian children. It might, therefore, be very important to determine whether some Indian cultures foster a different approach to learning than that imposed upon Indian children at school, and whether low achievement is rooted in this difference.

The Conference therefore reiterates its strong conviction that an understanding of the patterns of learning among American Indians will be of great assistance in finding solutions both for the language and general educational problems of American Indians. It reaffirms the feeling expressed by the Study Group in The Study of the Problems of Teaching English to American Indians: Report and Recommendations (Ohannessian, 1967) of the crucial importance of such understanding for the teaching and learning of English, and recommends that a comprehensive research project be instituted to study the styles of learning employed by American Indian groups in their everyday lives; to investigate the effects of such styles on the school achievement of Indian children; and to explore how education can be designed to take full advantage of these styles.

In order to make the research project maximally productive, the Conference recommends that it include the following four interrelated components: A. Background Studies; B. Related Research Projects; C. Direct Studies and Research; D. Pilot Projects. It also suggests that the Center for Applied Linguistics be given the responsibility of coordinating the various aspects of the project.

A. Background Studies

As a prerequisite to any research on styles of learning among American Indians, the Conference feels that it is very important to have adequate information on the present linguistic background of Indians; on relevant observations by anthropologists and students of Indian culture; and on current work on cognitive studies in general and on styles of learning among Indians in particular. The Conference therefore strongly recommends that the following three background studies be carried out to obtain essential information related to styles of learning among American Indians prior to the institution of any specific projects.

** Cf. page 2.

1. Language census. Except for a few areas, there is no accurate information on the numbers of speakers of the various American Indian languages. Given the complex and changing linguistic background of Indians, it is essential to have such information, as well as information on the native language, second language(s) and the home language(s) (spoken with parents, siblings and playmates) of members of Indian groups. The order and age of acquisition of these languages should be included. In addition, it would be important to investigate generational changes in order to project the future situation. Although all age groups are important, the census should focus on ages 6 to 20, with special attention to children entering school. Techniques used in collecting the information should be flexible in taking advantage, where possible, of existing sources and facilities, and in stressing the cooperation of Indians in the work where at all possible.

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2. Search of ethnographic literature. The abundant literature on Indian culture and anthropology is an important source of information on styles of learning. The search should begin with survey works such as that of Pettit (1946) and his associates, and bring the information available in these up to date through the examination of later works. Although all areas indicated in the recommendations given below should be included in the search, the two main areas to which it should devote special attention are: (a) learning and learning behavior in the acquisition of skills such as pottery making, weaving, and other arts and crafts, and the acquisition of "knowledge", and (b) beliefs and attitudes towards language and language acquisition, including attitudes towards the acquisition of other Indian languages. Special attention should be directed to the following: at what age Indians are considered competent in various skills and knowledge; what range of activities are considered to be learned informally as opposed to activities for which instruction is important; how much is to be learned from membership in the society; and what the circumstances are under which learning takes place, and the learning process. (It was noted that under the direction of Dell Hymes at the University of Pennsylvania a program of studies had been started reviewing ethnographic literature on the whole topic of the acquisition of communicative competence and the questions of beliefs and attitudes about language, including attitudes about how language learning should proceed.)

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3. Survey of current work. A survey of national and international programs and projects related to the area of styles of learning, as well as such studies among American Indians, should be made immediately prior to the implementation of any research recommended in the report. The purpose of such a survey would be to prevent duplication of effort and to coordinate and make the best use of any existing or ongoing research in this area.

B. Related Studies and Research

The Conference feels that it is important to have substantive information on three areas related to the study of styles of learning among American Indians, but not directly concerned with it. These areas are: (1) beliefs and belief systems prevalent among Indians and those in charge of their education; (2) sociolinguistic information on the function and use of language among Indians; and (3) language development and the acquisition of communicative competence. The Conference therefore recommends that special projects be instituted to study the following three areas and relate their findings to the study of styles of learning among American Indians:

1. Belief systems. The two aspects to be considered in a study of belief systems related to styles of learning are (a) the beliefs the Indian child brings to school as part of his specific Indian culture; and (b) the beliefs of his teachers. These systems will vary, in the Indian child, with the complex cultural and linguistic background of each tribe and the measure of acculturation of each child; and, in the case of the teacher, with his religion, his regional provenience and his personal history and background. It is suggested that the study of belief systems be conducted in selected communities where other research related to styles of learning is being carried out. The investigation should include attitudes and beliefs towards intellectual activity as well as towards language, with emphasis on such questions as whether different generations express different beliefs and expectations; whether there is a language shift taking place in the Indian community (e.g. from Indian language to English); whether there are differing attitudes towards various languages encountered and their values; what human achievements are valued; and to what extent these are attainable by self-effort or are to be taught deliberately. The investigation should include beliefs about children and what they should know at various ages, beliefs about language acquisition and about learning.

The Conference is agreed that, in principle, methods applicable to the study of Indian cultures may also be used with teachers. Such study may lead to a contrastive analysis of semantic and/or belief systems and ultimately perhaps to teaching materials capitalizing on this difference. It appears to the Conference possible to use observational evidence as a starting point but also to employ instrumentation and systematic observation far beyond casual observation. The Conference further believes that there is justification for including studies of the most conservative Indian beliefs in the community, since the acculturated Indians of today are somewhere between knowledge of the traditional beliefs of their own culture and those of the wider American community. For an effective study of these systems the Conference urges the use of trained Indian personnel at various levels of the project.

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2. Language use and function. Human societies vary greatly in their use of language, and recent studies which attempt to give sociolinguistic characterizations of particular communities should be extended to selected American Indian communities. Sociolinguistic studies of this kind examine the use of different languages, dialects, and styles in accordance with social stratification and particular settings and topics. It is characteristic of multilingual and multidialectal communities that the various languages and/or dialects tend to be used for particular "domains", i.e.

situations, topics, or participants. These facts of language function can have direct relevance to the use of language in formal education.

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3. Language acquisition. There have been a number of recent studies of early language development in children, employing current concepts of linguistics, psycholinguistics and sociolinguistics. The project going on at the Institute of Human Learning of the University of California at Berkeley, which is engaged in the collection of cross-linguistic and cross-cultural data on the acquisition of communicative competence through intensive case studies, is the type of investigation needed for the study of language acquisition among the children of American Indian groups. The Conference feels that such studies should be extended to Indian communities, i.e. research should be undertaken on the acquisition of first and subsequent languages of Indian children.

The Conference further suggests the systematic development of tests to measure proficiency and competence in their own language in children and adults in groups such as the Cherokee and Eskimo, whose languages have sizeable numbers of speakers as well as written literatures. The purpose of these tests would be to assess the stage of general linguistic competence reached by children at the time they reach school and perhaps later to identify school effects, possibly special peer language. For measuring proficiency in the use of standard English there are many instruments, including standardized tests and diagnostic procedures. Although the validation and utility of some of these measures can be questioned, they do sometimes provide valuable information. There are no comparable instruments for measuring proficiency in minority languages in the United States or non-standard varieties of English.

One reason for developing such measures in both English and American Indian languages is that the full range of knowledge of fundamental semantic notions that are represented linguistically,

and the full range of linguistic skill upon which the school might draw may not be captured in a traditional vocabulary or grammar test. For example, some evidence suggests that English monolingual Indian children living in communities on the margins of reservations may have some "impoverishment" of language if their parents only speak English at home, and themselves have a limited vocabulary and limited range of functions for English. Therefore in terms of their total vocabulary, conceptual range, fluency, and diversity of social skills in language an Indian monolingual or bilingual child might have an advantage over some English monolingual children. These differences might suggest some pedagogical devices to teachers, who can make use of what knowledge such children have through their skill in the Indian tongue.

It was suggested that educators be approached to establish a list of fundamental concepts such as comparison, numerical concepts, conditionality, and so on which are believed to be essential to cognitive development and school training. Many of these semantic notions are represented linguistically either in the lexicon or grammar. For example, in English there is the comparative system in adjectives, a plural-singular contrast in inflection, and a lexicon of cardinal and ordinal numerals. We can assume that even children who are monolingual in Indian languages on school entrance have mastered many of the forms in which their language codifies these same semantic contrasts.

Once such a core semantic list is obtained, the next step would be to identify how these concepts are realized in the grammar and lexicon of the Indian language and how much of the Indian and the English linguistic representation of them is known to each child in the study. Thus the final step is the study of the language competence of Indian children upon arrival at school so as to identify for the teachers which of these pedagogically important notions the children already control through their language. Knowledge of the representation of these concepts in the language might also give the school some additional ways for instructing the children in schools where the children are not English monolinguals.

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C. Direct St dies and Research

1. Observational studies. The Conference recommends that two types of basic research be undertaken for the study of styles of learning among American Indians: (a) case studies of a selected number of communities, through observation in the homes; and (b) more extensive studies, including a greater number of communities, for the purpose of collecting supporting evidence for the case studies. The Conference again urges that trained Indian personnel collaborate in and where possible direct the carrying out of both types of study.

The specific design of the first type of study will depend greatly on the training and interests of the chief investigator, but the Conference emphasized that the community studies should observe learning processes in the families, in the community setting, and not rely merely on informant reports which may be highly selective. In the second type the Conference suggests that adaptations of ethnoscience techniques be used, possibly with a check list to facilitate the collection of comparable data.

Based on a list of topics prepared by Oswald Werner, the Conference suggests that the following key variables be investigated in research projects for both types:

(a) Basic variables. The presence or absence of contemplative or meditative emphasis in the culture or high and 'active' valuation of 'thought'; the presence or absence of empirical emphasis (versus the above mentioned 'theoretical' emphasis); the presence or absence of verbal instruction (in relative terms). Imitation as a means of instruction (in relative terms). The reward system in the culture: whether reward is given through admiration (versus ridicule). Other reward systems present in the culture, e.g. health versus sickness; riches versus poverty; supernatural sanction, etc. The relative value of early performance versus a tendency to postpone performance until principles are internalized. The presence

of experimentation in skills as a private or public affair, and the preference for privacy for readiness before skill is demonstrated in public. Native beliefs about the nature of the child. The views of the path to adulthood. The nature of the adult person. What is regarded as valuable and worthy of learning and instruction by the people themselves. What is or needs to be learned, and what comes "naturally".

(b) Derived variables. Presence or absence of the "mental set", emphasizing the importance of thought. Expansion of the range of experience beyond a limited set of topics, e.g. livestock, the farm, the home and traditional religion. Appeal or lack of appeal to nationalistic feelings (i.e. "Red Power", "Navajo Power", etc.). Inclusion or exclusion of parents from school and/or the formal educational process. A careful presentation of the relevance of academic study and career opportunities to the child and his parents and the impact of such presentation on school achievement. Experimentation with the structure of the boarding school: provision of more privacy, parental involvement, and the provision of cottage versus barracks accommodation. The presence or absence of stressing the morality of thought; and the careful examination and/or control of different types of peer group structures and cultures.

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2. Tests related to cognitive styles. A number of psychologists have developed tests of children's learning and cognitive style, which have not, to the knowledge of the Conference, been used with Indian children. Some interesting tests have been conducted among a few minority groups regarding the effects of group affiliation on mental abilities such as verbal expression, reasoning, number and space. Results indicate that ethnic groups are different both in the level of each mental ability and the pattern among these abilities (Stodolsky and Lesser, 1967). The Conference recommends that comparable tests be devised for a selected number of Indian groups. The purpose of the tests would be to find out whether there are differences among the groups themselves and how these differences can be capitalized on to use the strengths of the various groups in planning the school curriculum and adjusting methods of instruction to them.

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3. Observation of classroom behavior. The Conference strongly recommends that concommitant with other research systematic observation be carried out on the behavior of both students and teachers in selected classrooms where substantial numbers of Indian children are being educated.

The Conference suggests that three types of classrooms be selected for such observations: (a) very successful classrooms; (b) classrooms where some different or experimental teaching is in progress, such as those conducted at Rough Rock and Rock Point; (c) ordinary classrooms. The Conference suggests that one way in which these classrooms may be identified is through assistance from educational authorities in the BIA or state schools. It suggests that the findings of the observations be compared and contrasted with the findings of the study and research projects outlined and recommended above.

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D. Pilot Projects

Pending the implementation of a comprehensive research program as outlined and recommended above, the Conference recommends that a few pilot projects be started, conjoined to ongoing research that is likely to yield significant information on this area. The projects which the Conference suggests are the following:

1. Michael Stanislawski of the University of Oregon is engaged in conducting a research project to study the transmission of pottery making techniques among American Indians. This project could be broadened to include styles of learning and teaching employed.

2. Oswald Werner of Northwestern University is conducting research on Navajo native psychological (medical) terminology (including 'thought') under a grant from the National Institute of Mental Health. This project could be broadened to include a study of the belief systems of the Navajo, Apache and Papago.

3. A cross-cultural study of the acquisition of communicative competence, as pointed out above, is being carried out at the University of California at Berkeley. The project has had support from the Institute of Human Learning at Berkeley, the National Science Foundation, Project Literacy, Social Science Research Council, and the U.S. Office of Education. Such research with further support could include studies of children in several Indian communities. The Conference suggests that graduate students at the University of California at Berkeley and Stanford University be encouraged to carry out such research.

Funding the Project

Although the present meeting is being sponsored by the BIA, the Conference feels that research on styles of learning among American Indians is of such crucial importance to the educational achievement of Indian children, and will have such important implications for work among other minority groups, that the need for it should be brought before other agencies and institutions which may be interested in funding either the entire program or sections of it. In addition to the Bureau of Indian Affairs, the agencies and institutions that should be made aware of the recommendations of the Conference are the following:

The National Science Foundation
The National Institutes of Health
The National Institute of Mental Health
The Office of Education
The Office of Economic Opportunity
The Smithsonian Institution
The Social Science Research Council
National Academy of Sciences, National Research Council

The Ford Foundation
The Kettering Foundation
W.K. Kellogg Foundation
The Carnegie Corporation
The Rockefeller Foundation
Donner Foundation
Doris Duke Foundation
Library of the American Philosophical Society
The Lilly Endowment Incorporated

APPENDIX

Working Papers

Cazden, Courtney B. and John, Vera. Learning in American Indian children. [In the present volume, pages 1-18.]

Coombs, L. Madison. BIA-sponsored educational research. [In the present volume, pages 19-22.]

Dozier, Edward P. Range of cultural and linguistic variation among American Indians.

Hale, Kenneth. Styles of learning: two forms of knowing in Papago.

Kennard, Edward A. The bilingual education program.

Werner, Oswald with Bigishe, Kenneth Y. Styles of learning, the evidence from Navajo thought.